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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,511	11/27/2001	Noboru Nomura	10873.849US01	1838
23552	7590	01/10/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			WU, XIAO MIN	
			ART UNIT	PAPER NUMBER
			2674	

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,511

Applicant(s)

NOMURA ET AL.

Examiner

XIAO M. WU

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 16-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/26/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1, 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amici et al. (US Patent No. 6,822,781) in view of Ootake (EP 0 849 003).

As to claim 1, Amici discloses a display device comprising: a plurality of charged substances in different charged states or with opposite polarities in two regions of a surface area of a base material (col. 3, lines 59 to col. 4, 19), wherein an organic film is bonded and fixed to a part of or an entire surface of the base material having a volume of less than 1 cm³ (col. 5, lines 1-3), the surface region of the base material is divided into two regions in accordance with the kind of organic films or the presence or absence of the organic film (col. 4, lines 1-3); and each of the two regions accounts for 40% or more (e.g. 50%) and 60% or less (e.g. 50%) of the

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surface area of the base material; and wherein the plurality of charged substances are dipped in liquid between a pair of substrates each having an electrode, and voltage is applied to the electrode, thereby enabling the charged substances to be rotated (col. 3, line 59 to col. 4, line 19). It is noted that Amici does not specifically disclose the organic film is bonded to the surface of the ball via –A-O- bond or via –A-N- bond. However, bonding an organic film to a surface is well known in the art as taught by Ootake. Ootake teaches bonding an organic film to a substrate via a –A-O- bond. It would have been obvious to one of ordinary skill in the art to have used Ootake's bonding method in Amici because Ootake's bond method can provide an organic ultra-thin fixed every strongly onto a substrate surface.

As to claim 3, Amici discloses that the organic is a monomolecular film.

As to claims 4, 13 Amici discloses that the size of the ball is about 5 to 500 micron so that the film is much less than 5 micron.

As to claims 5 and 6, Amici discloses that the ball can be a sphere or a cylinder shape (col. 25, line 31).

As to claims 7-9, Amici discloses that the liquid can be silicon which has very high resistance (col. 4, lines 59-67).

As to claim 10 and 11, Amici discloses that the organic film absorbs water by a surfactant which has both cationic property and an anionic property (col. 13, lines 1-5).

As to claim 12, Amici discloses that one side of the display is transparent. It would have been obvious to have designed a proper refractive index of the glass and liquid so as to view the display element in a proper angle.

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4. Claims 2, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amici et al. (US Patent No. 6,822,781) in view of Ootake (EP 0 849 003) as applied to claims 1, 3-13 above, and further in view of Sheridan et al. (US Patent No. 5,815,306).

As to claim 2, it is noted that both Amici and Ootake do not disclose at least one of the substrate is equipped with a color filter. Sheridan is cited to teach a twisting ball display device similar to Amici. Sheridan further discloses one of the substrate is equipped with a color filter (col. 20, lines 1-2). It would have been obvious to one ordinary skill in the art to have modified Amici as modified with the features of the color filter as taught by Sheridan so that the color pigment on the surface of the ball can be eliminated.

As to claims 14 and 15, Sheridan further discloses that each of the charged substances functions as a pixel and each pixel is provided with at least one lens and lens is provided on the substrate located at the side of a viewer (see Fig. 18).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The US Patents 4,143,103, 5,708,525, 5,900,858 are cited to teach a twisted ball display device.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiao Wu whose telephone number is (703) 305-4721.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

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or faxed to:


(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377

xw

January 8, 2005


XIAO WU
PRIMARY EXAMINER
ART UNIT 2674